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(PROGRESSIVE DEMENTIA).

BY

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Professor of Mental and Nervous Diseases in the New York
Polyclinic; President of the New York
Neurological Society, etc.

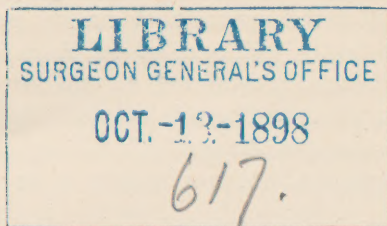
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THE
EARLY RECOGNITION OF GENERAL PARESIS
(PROGRESSIVE DEMENTIA).*

By B. SACHS, M. D.,

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PRESIDENT OF THE NEW YORK NEUROLOGICAL SOCIETY, ETC.

WHEN the president of this section requested me to prepare a paper on some subject of general interest, it occurred to me that it might not be unprofitable to discuss the difficulties besetting the early diagnosis of general paresis. As conscientious physicians we can not fail to recognize the grave results that may accrue to the patient and to those dependent upon him if the diagnosis of paretic dementia has been established. If the patient is a man of affairs, it becomes the physician's duty to advise the family that such person is no longer able to manage his own estate or his own business; or, if he is on the point of undertaking some important step in life, the physician is under the necessity of acting not only in his medical capacity, but also as counselor and friend. It is for these various reasons that prompt recognition of general paresis is far more important than

* Read before the Section in Neurology of the New York Academy of Medicine, February 18, 1898.

the early diagnosis of many other diseases. The opinion is common that the suspicion of general paresis in a given case is usually well founded—if there is reason to suspect the disease, it is already beyond suspicion; but there are exceptions to this rule as to all others, and the practitioner errs more frequently in failing to recognize dementia paralytica than in mistaking it for some other disease.

As in *tabes dorsalis*, so in progressive dementia, the full-fledged form of the disease bears its unmistakable symptoms; but, like *tabes*, it is often most insidious in its onset, and its earliest symptoms are variable and poorly defined. If a patient presents a history of an active, successful life up to the age of thirty-five or forty years; if, after a period of slight irritability or of moodiness, he has become unmindful of his duties toward his family; if he has become lax in his morals and in his business methods; if he fails to keep important engagements; if a change in his mental attitude is indicated by a turn from rational economy to wasteful expenditure; if in any one of a thousand ways he proves that his judgment is defective and his memory poor, we may well suspect some form of general paresis. Let the patient, in addition, be in a distinctly exalted mood; let him utter marked delusions of grandeur, or be subject to epileptic and apoplectic seizures; let him present a distinct reflex iridoplegia, tremor of the face and hands, the peculiar stammering and tremulous speech, knee-jerks that are either exaggerated or absent, and no one can doubt the diagnosis of the disease. The problem is complicated by the fact that in point of time the physical symptoms often, though not invariably, precede the mental, or the physical signs may be well marked while the mental

phenomena are still in doubt; yet no one should venture to make the diagnosis of general paresis from the physical symptoms alone, unless there be at least some indication of a change in the person's psychic state. Our attention will naturally be directed to those early physical symptoms which are most characteristic of the disease, and which, if they occur in conjunction with any mental defect, point to the existence of progressive dementia.

Before proceeding to the discussion of these details, let us take note of the change which, according to different authors, is said to have come over the clinical type of general paresis. Krafft-Ebing* states that such a change has been noted during the past decade; an opinion which is shared by Mendel and other European alienists. In this country this same sentiment has been voiced in a recent article by Collins.† That the cases of general paresis differ somewhat from those observed fifteen and twenty years ago may well be granted. In a general way the present writer had been impressed with the truth of this view, but a calm and careful study of sixty-two histories taken from his private records has shown the necessity of making a more guarded statement. The change referred to has been exhibited in several ways: First, and this seems to be the most important point, paretics appear to live, or to linger, longer than they formerly did. Not more than half of my patients suffering from progressive dementia have died within a period of three years; nine of them have exceeded the period of six years, and one is leading a blissful, though demented, existence for more than ten years since the

* *Die progressive allgemeine Paralyse*, Vienna, 1894.

† *Medical Record*, February 5, 1898.

diagnosis was made. Secondly, the unusually long remissions have often been surprising, and a few recoveries in cases in which the early diagnosis seemed to be beyond doubt have been particularly noteworthy. Thirdly, marked delusions of grandeur do not appear to be as common as in former days. I have seen fewer of those who owned sufficient ships to build a bridge reaching from New York to Liverpool, and it is a long while since I have met a paretic whose imagination was as vivid as that of an architect whom I treated some ten years ago, who believed himself commissioned by the King of Bavaria to fill Munich with elegant palaces, each palace to have windows of diamond instead of common glass. The patient with great poetical talent, with tremendous capacity for manipulating the stock market, the man who is going to buy up all the vacant lots to build homes for the poor, still cross my path. The patient who was ready to pay Dr. Granger one hundred thousand dollars for his home and give him a million in addition, and the man who had patented a contrivance by which people were to be brought back from the other world, have ambitious rivals. There is almost as frequent mention in my histories of that happy and exalted frame of mind which is the paretic's only blessing. "Never felt better in my life," spoken in a way that the phonograph alone can reproduce, has the same ominous ring as of old. The delusions may be less marked, but the euphoria and the exalted mood are as typical as ever. Possibly the hypochondriacal state is a little more common in the earlier history of the disease; but, if so, the fact can be proved only by larger statistics than are at my command.

The older writers insisted that that form of general paresis which was characterized by an exalted mood

took a less violent course than those that were characterized by the hypochondriacal state, or by the early development of dementia. It would seem, therefore, if the disappearance of the delusion of grandeur as a common symptom of general paresis mean anything at all, it means that the disease, as we see it nowadays, is less favorable than that of two or three decades ago; and yet the greater longevity of the paretic of to-day is opposed to this interpretation. The better care of the patient and the earlier removal from his surroundings may, however, be factors of some importance. I can not agree altogether with the view that a motor type of the disease is more prevalent at the present time. The motor or, better said, the physical symptoms were fully appreciated by the prominent alienists of twenty or thirty years ago, and had been given due weight in the later writings of Mendel,* Westphal,† Binswanger,‡ Mickle,§ Blandford,|| and others; nor should we disregard the fact that in a number of instances the typical physical signs have not appeared until after the full development of mental symptoms.

Before deciding whether a disease has changed in the course of years, it is well to ask whether we are not possibly beginning to note minute differences between a type as established years ago and other affections which resemble a given type so closely that it is difficult to differentiate between them. All of us remember the time when progressive muscular atrophy represented a very definite and, as we supposed, a spinal disease. We have

* *Die progressive Paralyse der Irren*, Berlin, 1880.

† *Archiv für Psychiatrie*, i; *Gesammelte Abhandlungen*, i, p. 204.

‡ *Festschrift*, Hamburg, 1891.

§ *General Paralysis of the Insane*, London, 1886.

|| *Twentieth Century Practice of Medicine*, xii.

passed through the stages in which these atrophies have been subdivided into many different groups, so that at the present time the term "progressive muscular atrophy" conveys no definite meaning as to the part of the nervous system specially affected. The term is now generic rather than specific. Just so some of us recognize the fact that the clinical type of tabes dorsalis may represent morbid conditions that are to be distinguished from posterior spinal sclerosis. In like manner, too, the term "general paresis" includes a number of clinical types dependent upon varying morbid processes. Before we decide that general paresis is not so fatal a disease as it was a decade or two ago, or that it is at the present time more amenable to treatment than it was in former years, we must make sure that we are not confounding with this disease other diseases whose clinical symptoms are so much like those of general paresis that we find it convenient to include them under one heading, although the symptoms are due to morbid processes which resemble each other chiefly in this, that they lead to the same terminal condition. How else could we explain the very marked resemblance in the clinical features between general paresis of the classic order and syphilitic and alcoholic dementia, or between the former and traumatic meningo-encephalitis terminating in atrophy of the cortical elements?

The problem may be simplified by assuming that there are different morbid processes producing the ordinary symptoms of progressive dementia. Of the vascular origin of the disorder in the majority of instances there can be little doubt; it is not difficult to conceive that the circulatory disturbance may follow upon acute infections, upon cerebral injuries, or upon a specific endarter-

itis. During the vascular stage the cellular elements (chiefly of the cortex) may exhibit impaired function, but need not be permanently destroyed. Under such conditions remissions and recoveries are possible, but they are not conceivable at a time when the long-continued vascular disturbance has led to a destruction of a large, or of the largest, number of brain cells and fibres. In some few cases the cellular elements may be primarily diseased and yet not be beyond the possibility of improvement and recovery. A recent French writer, Marandon de Montyel,* distinguishes between a progressive and a retrogressive form of paretic dementia, the latter being synonymous with pseudo-paresis, which, as he claims, "is always of toxic or infectious origin, and after an unusually violent onset reaches a climax and then recedes toward complete recovery." Such a form, this author supposes, never passes beyond the hypochondriacal stage. Further studies in the morbid anatomy of paretic dementia must reveal the truth or falsity of these theories. The terminal stages of the morbid process are sufficiently well known; the earlier stages need investigation. Leaving all theories aside, the clinician must decide whether or not he can recognize those forms which are certain to be fatal and those which hold out a fair prospect of improvement or recovery. If this is to be done at all, it must be done when the first signs of cerebral disease appear.

In the earlier stages of every form of progressive dementia the physical signs arrest our attention. Chief among these are, in the order of their importance: (1) The stammering, tremulous speech; (2) the tremor of the facial muscles and of the tongue; (3) the pupillary

* Quoted in *Revue neurologique*, January 30, 1898.

symptoms; (4) the change in the individual's handwriting; (5) the exaggeration or the absence of the reflexes.

1. The disturbance of speech is unquestionably one of the earliest symptoms, and is so characteristic that one is not infrequently tempted to make the diagnosis of progressive dementia if a patient who has shown some mental change has in addition that peculiar stammering utterance which makes the use of words of many syllables, or of sentences in which there is any alliteration, particularly difficult. Yet it occurs at times in persons whose mental deterioration is of distinctly alcoholic origin. I have the histories of two such patients in whom I was led to make the diagnosis of general paresis from this and other symptoms, and with the recovery that set in the disturbances of speech disappeared.

2. The tremor of the facial muscles, which occurs only in progressive dementia and in chronic alcoholism, is a symptom of the greatest value. If alcoholism can be excluded, it is unquestionably a grave symptom, and may well support the diagnosis of general paresis.

3. The pupillary symptoms have by many writers been placed first among the physical symptoms. In several patients of mine they have not been developed until long after the appearance of the characteristic speech disturbances and of the facial tremor. The typical Argyll Robertson pupil is common enough, and particularly in those forms associated with tabetic symptoms. The complete immobility of the pupils, both to light and during accommodation, is present in a large number of cases, and is often associated with inequality of the pupils and with the history of preceding ocular palsies, all of which occur more commonly in those who have been exposed to the syphilitic contagion. The irregular con-

tour of the pupil has been described as occurring in paretics. It is not dependent upon a preceding iritis, is more probably due to defective innervation, and is, by the way, often seen in persons with constitutional syphilis and also in some young and healthy persons.

4. The changes in the handwriting are of special value, not only as illustrating the tremor of the fingers and of the hand, but as giving the first evidences of that mental dissolution which is most marked in acts which have been performed with the greatest skill. The dropping of letters from words that were written with ease and almost unconsciously, the omission of syllables, the running together of words that should be separated, and the entire failure to punctuate, may be the first signs pointing to serious mental defect. Too much importance should not be attached to the tremor alone, for in other diseases, and particularly in multiple sclerosis, very similar physical disturbance occurs.

5. The reflexes invite close attention, for, if absent, they may be part of the symptoms of a tabetic process with which progressive dementia is frequently associated. If exaggerated, great care should be taken not to formulate the diagnosis of general paresis unless a purely neurasthenic condition can be safely excluded.

Without underrating the great value of these various symptoms we must remember that the diagnosis of parietic dementia can be established only if some one or more of these physical signs are present in association with mental symptoms, however slight these may be.

The normal individual near or past middle life is the creature of well-established habits of thought and action. Any departure from the standard which the individual has established for himself should at all times

be regarded with considerable suspicion, and any changes in the person's bearing that are not in keeping with his position in life—extravagances which he has no right to indulge in, or economy which he need not practise, indifference to his family, which was not his wont, or sudden devotion to persons whom he formerly would have shunned—should be taken to be symptoms of grave mental disorder. Defective judgment and, above all, defective memory, of which the patient himself frequently complains, are the mental signs that can well be placed in the same scale with the physical signs to which I have referred above. I need not, however, dilate further upon the psychic symptoms of the disease, for I may well suppose that they are familiar to all.

In spite of our accurate knowledge of the disease, its earliest stages may easily be confounded with other affections. The first of these is cerebral neurasthenia. The question of differential diagnosis between this recoverable affection and progressive dementia comes up often enough.

Many years ago the late Dr. Mackenzie sent A. M. F. to my office with the request for a diagnosis as to his mental condition. The patient was thirty-nine years of age, was an excessively hard worker, and had been happily married for five years. His previous history, so far as I could gather it from him and from his wife—a talented lady—was that he had been nervous for a year, ever since a partner went to Europe, leaving great responsibilities upon the patient's shoulders. He complained of headaches, of difficulty in remembering occurrences of years ago, of a difficulty in concentrating his thoughts, and also stated that without provocation he seemed extremely irritable; was drowsy all day long. He was puzzled and anxious about his condition. He hesitated a little in speech, but this might well have been

due to the excitement of the examination, for he repeated test sentences that were given him with ease and correctly. His pupils were equal and reacted promptly. There was marked tremor of the hands and of the tongue, but not of the facial muscles; the knee-jerks were lively. I made the provisional diagnosis of cerebral neurasthenia, but suspected the possible beginning of dementia paralytica. Four days after my first examination I was summoned hastily from my office with the statement that this patient had had an epileptic seizure. Before I could reach him other physicians, who had been called in, had begun to catheterize him, evidently supposing that the epileptic attack was due to a uræmic condition. But to me, who had seen the man a few days before and had had doubts as to his mental condition, the diagnosis was clear at once, and the epileptic seizure proved that the man was doomed to general paresis. The epileptic seizures recurred several times during the first week, the dementia developed rapidly, and the patient was taken to Bloomingdale, where he died within a period of a few months, having developed all the typical symptoms of dementia paralytica.

The patient has appeared to me to be an excellent type of the most rapidly developing form of general paresis, and one can hardly suppose that the same morbid process underlies the disease in such a case as when it runs the slow course it does in so many others, covering a period of years, with remissions of varying duration.

The differential diagnosis between cerebral neurasthenia and general paralysis is not always established as quickly as it was in the history of the case above mentioned.

Another patient, whom I saw in September, 1890, complained of sleeplessness and inability to concentrate his mind upon any one thing. He was a well-bred, intelligent man of twenty-nine years of age; he stammered

a little under excitement, but claimed that this was not unusual. The suspicion of dementia paralytica was aroused, but his pupils reacted promptly; deep reflexes were normal, and his memory was excellent; the slight tremor of the hands and tongue was not more marked than in neurasthenic patients. After resting from business and sojourning in a well-known sanitarium he was much improved. Nine months after the first examination the pupils were still normal. In September, 1891, after a hot summer, he seemed to break down completely; the pupils became unequal, and the right reacted poorly to light; there was marked facial tremor; knee-jerks were a little subnormal; speech defect very marked; memory slightly impaired. Upon this there followed a period of improved health, so that he took up bicycling, and showed considerable interest in music and in current affairs. One day he returned with the statement that he "is getting happier all the time," and from that day onward there was a continuous and rapid progression of the disease to a fatal issue, about four years after the onset. It is noteworthy that in this case, too, the supposed neurasthenic condition lasted nearly a year, and the mental symptoms appeared long before the pupillary phenomena were in evidence.

As a rule, in cerebral neurasthenia the complaints are of a hypochondriacal order; the loss of memory is more apparent than real, the patient having all his dates and facts accurately in mind. In writing, his hand may tremble, but he does not omit letters or syllables, and if perchance he does, he quickly recognizes the omission, and his pupils do not present the altered reactions associated with the classic form of dementia.

In cases in which the diagnosis is at all doubtful a short period of observation will generally clear up the mystery, for the neurasthenic recovers rapidly under the influence of rest; the paretic may quiet down a little, but

the physical symptoms once established do not disappear.

Progressive dementia may well be confounded with alcoholic conditions, and the question arises whether we can distinguish in the earlier stages between alcoholic and other forms of progressive dementia. The question is well worth considering, for the prognosis differs so materially that much depends upon a correct answer to this question. A single history will illustrate the point.

M. F. D. consulted me in January, 1896. He was a merchant, aged forty-four years, single. Four weeks previous to his visit to me he was taken with a chill while in Chicago, and from that time on had not felt well. He began to notice that he could not find words to express himself. He was much alarmed over this condition, returned hurriedly to the city, and on his way to New York noticed that his left arm and leg were numb. His extremities seemed weak, but he was at least able to walk. He also felt a numbness in the right hand and experienced considerable difficulty in writing. He acknowledged that he had been drinking for many years without ever becoming intoxicated, and had stopped drinking four weeks ago. When asked whether he was troubling himself about anything, he stated: "I am not fretting about anything. I am one of the healthiest men in town." He conceded that he was not able to attend to his business, but did not think that it was of any consequence, although he was dependent upon it. He stated that his memory was very good, but when questioned as to the day of the week or the day of the month, was wholly at sea. He was unable to find words for ordinary objects, such as paper weight, writing desk, or radiator. When given test sentences, he made a horrible jumble of them. When asked to write his name and address, he did it correctly. He wrote Philadelphia, Syracuse, and Rochester without a mistake, but failed utterly in writ-

ing Constantinople, which he made Constinoble and could not be made to see that it was not spelled correctly. On attempting to read a paper aloud, he omitted words, and hesitated in reading words of more than two syllables. His speech was tremulous and exactly like that of patients with progressive dementia. The knee-jerks were absent. There was no Romberg symptom and no girdle sensation. The grasp was good.

The physical and mental symptoms were so much like those of the classical form of general paresis that one might well have made that diagnosis, but the subjective sensations of numbness in the arm and legs, and the tremor of the hands, which was typically alcoholic, led me to give a somewhat more favorable prognosis than the symptoms at the time seemed to warrant. The patient was isolated, put under strict surveillance, and in the course of the next three months improved to such an extent that all but the physical symptoms, including the speech disturbance, disappeared. His mind seemed clear; he began to interest himself in daily occurrences, and within a period of nine months after my first examination he was able to return to his work, to which he has attended regularly ever since. As the history reads at the present time, the diagnosis of an alcoholic dementia seems evident enough, but there are other cases in which the diagnosis is not so readily made, particularly if the alcoholic condition is a more acute one, and if some of the other signs of chronic alcoholism are wanting. If such symptoms as marked tremor of the tongue and hands, paræsthesia, and signs of peripheral neuritis are present in a case exhibiting some of the typical symptoms of dementia paralytica, one may well hope that the symptoms are due to the effect of alcoholic poisoning upon the cortical cells, a condition from which the patient may recover, and the diagnosis of dementia paralytica should be held in abeyance for a considerable length of time.

In this connection I wish to speak of another patient who is still under observation, who has been seen by two

other neurologists of this city, and in whose case the physicians in attendance were called upon to decide whether the man should be allowed to marry. The obligations which a correct diagnosis of the disease in question entails upon the physician have been brought home very forcibly to me and others in connection with this special patient.

H. V., a merchant, aged twenty-nine years, of robust build, and a man of high temper. Had always enjoyed very good health. He had been exhibiting marked changes in his behavior for four or six weeks before the time of my first examination, in November, 1896. He had been smoking on an average fifteen cigars a day, and stated that during the past few months he had been drinking considerably, but denied having any special craving for it, having indulged in spirituous liquors merely in order to stimulate himself for an excessive amount of work on his hands. His memory seemed to be impaired, though he had been filling a responsible position in a fairly satisfactory fashion. The most characteristic symptom was a peculiar, rapid, syllabic, stammering speech, which reminded one of the speech of a paretic, but was claimed to be a mere accentuation of a stammering habit which had been evident in former days during periods of excitement. During the examination he showed considerable impatience, was very certain that there was not much the matter with him, did not know why he should be subjected to so many examinations, and felt that, if he could leave his work for a time and marry, he would soon improve. His mental condition was somewhat suspicious, but the pupils reacted well; the knee-jerks were a little subnormal, speech was characteristic, and there was a marked facial tremor. After careful consideration of the mental and physical symptoms, the condition was diagnosticated by me as a neurasthenia; the remark was noted in my history that there was no positive evidence of "general paresis." Other physicians concurring in this opinion, the patient mar-

ried and went abroad. On the trip across the ocean he became exceedingly irritable, and after spending a few days on the Continent, where he developed a fit of most violent temper and extreme irritability, he became thoroughly confused and was removed, at the suggestion of a well-known alienist, to a private institution. He was isolated for a number of months, during which time his reason was supposed to have been entirely gone, and presented symptoms which by some were believed to be typical of progressive dementia, while others claimed that the symptoms were not characteristic and that recovery was possible. About ten months after his marriage he had so far recovered that he was allowed to return to this country and was urged to go back to business. He has been under my observation again since November, 1897. His mental condition is even at the present time far from normal. He is, on the whole, in an exalted frame of mind, for, although dependent upon his work for his livelihood, he is not in the least worried about it, and expresses in a rather perfunctory way his anxiety to return to work. He has had several attacks of violent temper, but for each one there has been some distinct, though not always sufficient, cause. During the past month he has attempted to make some business connections, but every one whom he meets appears to be repelled and to have his doubts aroused by the patient's peculiar stammering speech. He is thoroughly informed on the subjects of the day, reads the papers, and can converse intelligently about everything that is going on. His speech has, however, undergone of late some improvement, and it is rather of the stammering than of the syllabic order. A few weeks ago his pupils were noted to contract well under strong light, but were quickly dilated. The contour of the left pupil was irregular, that of the right entirely normal. Both pupils reacted well during accommodation. His knee-jerks were normal. He still presents distinct tremor of the facial muscles and of the tongue. Up to the present time no further changes have occurred, except that the

pupils react well and that the facial tremor and the tremor of the tongue have become less than they were. About four weeks ago he had a spell during which he was not able to speak.

Under the circumstances there is good reason to hesitate in making the diagnosis of a progressive dementia, although the mental symptoms argue in favor of it. It is well to note that in this case, in which excessive alcoholism, previous syphilitic infection, and possibly excessive smoking have been of some ætiological importance, the ordinary physical symptoms of paretic dementia are not fully developed, the tremor and the speech disturbance being such as we could explain on the supposition of an alcoholic affection. I refer to the patient in this instance in order to prove that even after the lapse of a year and a quarter there may still be reasonable doubt as to the diagnosis of paretic dementia, and I think it well not to give up all hope of the patient's ultimate recovery until further and indubitable signs shall have been developed.*

The differential diagnosis between progressive dementia and syphilitic brain disease resembling it calls for careful discussion. It would be desirable if we could omit the consideration of brain syphilis, which to many seems to be more or less of a bugbear, but we might as well attempt to discuss multiple neuritis without referring to alcoholism as to discuss the ætiology of tabes dorsalis or of general paresis without referring to the syphilitic contagion. Whether the circumstance be a fortunate or an unfortunate one, the fact remains that the close relationship between specific infection and general paresis can no longer be doubted. It has been proved in so many different ways that it would seem almost super-

* Since this was written a decided change in the mental symptoms has occurred, leaving little doubt as to the grave character of the disease.

fluous to insist on this point again and again, if it were not for the constant reiteration of the doubts of some who seem to be much troubled by this relationship. Rieger has compiled the results of eleven independent statistical records showing that in one thousand non-paretics only forty presented the history of a preceding syphilitic infection, whereas of a thousand patients suffering from parietic dementia four hundred had been previously infected with syphilis, and practically all other recent writers have come to similar conclusions. Mendel states that there is a history of a preceding syphilis in seventy-five per cent. of paretics from the higher walks of life and in only 18.6 per cent. of patients suffering from other forms of mental derangement. In the syphilitic wards of Professor Lang, in Vienna, sixty-three cases exhibiting late manifestations of syphilis were examined with reference to the history of a specific infection, and of these positive statements as to the initial lesion were obtained in fifty-four per cent., probable statements in 9.5 per cent., and in 36.5 per cent. there was no satisfactory history of specific infection, although distinct signs of late syphilis were in evidence. A comparison of these figures would show that the previous infection has been proved more satisfactorily in the statistics of mental cases than in statistics collected of distinctly syphilitic patients. The causal relation between syphilis and general paresis has been established by an experiment which is convincing enough, but which I believe will not be imitated so readily in this country. Recognizing the immunity which syphilitic patients enjoy, a physician in Vienna has attempted to reinoculate with the syphilitic virus nine patients suffering from parietic dementia. The experiments were conducted in a

thoroughly scientific fashion and the patients were observed, with one exception, for a period of one hundred and eighty days after inoculation. Not a single one of these paretics exhibited any reaction upon this attempt at reinoculation. It is evident that this immunity was due to the fact that the patients so inoculated had been previously affected with constitutional syphilis. It would appear that similar experiments, made as long ago as 1854 with other insane patients who had not been previously infected, yielded similar results.*

Although duly impressed with the importance of such experimental data, I would not claim syphilis as the sole cause of parietic dementia. It is in all probability the most important predisposing condition, but need not be sufficient to produce the disease unless some other exciting cause, such as overwork, sexual excesses, and above all intense worry and excitement cooperate with it.

If we indorse the preceding statements the question may well be raised whether it is necessary to attempt a differentiation between syphilitic dementia and the typical progressive dementia. But there is need of such a differentiation; while the large majority of cases of this affection may be remotely due to syphilitic disease, there are evidently some which are directly due to the specific process, and which are developed, as a rule, within a reasonably short period of time after the initial infection. The conditions are similar to those which obtain in *tabes dorsalis*. A very large percentage of tabetic patients have had syphilis in earlier years, yet it may well be doubted whether the posterior spinal sclerosis is

* For a full statement of these facts see *Arbeiten aus dem Gesamtgebiet der Psychiatrie und Neuropathologie*, von R. von Krafft-Ebing, 2tes Heft, Leipzig, 1897.

primarily specific in origin, although such may by further researches be proved to be the case. Yet there are some cases of syphilitic spinal disease which so closely simulate tabes that they are generally included under this clinical designation, and these are due, as has been shown by several autopsies, to a specific meningo-myelitis very different from the ordinary posterior sclerosis.

It is probable that certain changes occurring in the brain, particularly in the cortex, in the early stages of a syphilitic infection give rise to a series of symptoms which resemble the classical type of parietic dementia so closely that it is difficult to differentiate between them. For years I have attempted to get at the signs which would help us to recognize the truly specific forms of dementia, and for this purpose have always regarded those symptoms which point to the existence of a general cerebro-spinal syphilis (such as pupillary immobility, ocular palsies, preceding and transitory apoplexies) as most valuable signs.

With regard to the prognosis and the treatment this differentiation would be one of the greatest significance. My own experience has shown that the distinctly syphilitic cases at times yield a more favorable prognosis than the others, but do they always recover under antisyphilitic treatment? Let me refer in this connection to a single case which is anomalous enough in many respects to suggest that the morbid process underlying the condition is different from that in the classical type.

In July, 1888, I had the first opportunity of examining a young chemist, aged twenty-five years, who had been at work for several years, and had managed a chemical factory with considerable skill. Nothing out of the ordinary was observed until some months before

the examination, when his relatives noticed that he laughed a great deal and seemed silly and irritable. The separation from a partner seemed to have been the special cause of bringing matters to a focus. There was a distinct change in his manners and in his habits; he would often do the very reverse of things he had been accustomed to do, and showed a general defect of judgment and some lapse from a former high state of morals. To some old friends he wrote long letters about the silliest books, took baths at open windows, and to a governess in his home began to speak in rather shameless fashion about the syphilitic disease which he had acquired while a student abroad. He was fond of presenting flowers to ladies of his acquaintance, but they very often reached the wrong person; he sent them again and again to elderly ladies, when he had intended them for their daughters. At the time of his examination it was found that he was well nourished, but had a peculiar vacant stare and presented a marked disturbance of speech, halfway between a lisp and the ordinary parietic utterance. He stated that his nerves were shattered and that he would have them repaired; also that he had been reading a great deal. When asked what, he stated Stevenson's *Arabian Tour* and could not be made to give the correct title. He claimed that he could speak five languages, and each so perfectly that a native could not detect the difference between his pronunciation and that of a native born. He knew the common chemical formulæ, but had evidently forgotten a few of the more complicated ones which I could ask him to write. He did not seem to find it strange that I should be questioning him. He knew that I was a physician, but could not recollect my name, although it was mentioned to him a number of times. He evinced some interest in public questions, and when pressed for a statement as to any particular one, rattled off a trite phrase regarding free trade. The physical examination showed a very marked tremor of the facial muscles. The pupils were dilated, unequal, and did not react well either to light or during

accommodation. There was distinct tremor of the hands. Both knee-jerks were exaggerated, and ankle-clonus was present on both sides. This patient was under my observation for several years, during which time he became absolutely demented. He had several apoplectic seizures, after which he was so much weakened that recovery was not looked for. Yet he rallied from these and has lived on and on, although he is practically for the past eight years but a simple vegetating organism without the slightest trace of any mental action. I saw him, quite casually, about a year ago; he was in good physical condition, could not utter a single word, made a lalling sound, but could not appreciate anything that was said to him, nor did he evince as much intellect as a child of six months would.

The diagnosis of parietic dementia was concurred in by Spitzka, who saw the patient many years ago, and, although that diagnosis was fully warranted, it is fair to say that the condition is due to a distinctly syphilitic process, possibly a meningo-encephalitis, which has led to a complete atrophy of the greater part of the cortex. From a clinical point of view, it is important to note that it is ten years since my first examination, and at least eleven years since the disease began.

I have the records of another distinctly specific case, which has now lasted over five years. I will not weary you with the details, but suffice it to say that the patient was brought to me some years ago with distinct symptoms of parietic dementia, exhibiting marked delusions of grandeur, characteristic parietic speech, immobile pupils, exaggeration of the reflexes, and all the typical physical signs. The patient has been confined in several institutions during periods of excitement, in which he was so unmanageable that he could not be retained at home. He has had several apoplectic seizures, in one of which all hope of his recovery was abandoned. I gave the most unfavorable prognosis, and the patient was taken home to the South to end his days there, but, as I understand, has recovered so fully that he is once more able to attend to business and is apparently well.

Such histories could be multiplied still further from my own records, but there would be very little gain in so doing. There are several patients under my observation at the present time whose future is very problematical, including a physician whom I shall not so readily forget, because he came to me for examination of his own symptoms shortly after a consultation with him over another patient. This physician developed all the signs of parietic dementia within a relatively short period after his specific infection, which he had acquired during obstetrical manipulations. For over a year and a half I have been watching his condition, hoping almost against hope that the poor fellow would after all not succumb to the disease, and that in view of the distinct specific history, and of the fact that all his symptoms had developed within a few years after a specific infection, a long period of remission and usefulness would possibly ensue, or that he would recover wholly from the disease. At the present time his memory is remarkably defective; his knowledge of medicine has dwindled down to such an extent that he can not remember the names of the most ordinary diseases; he has forgotten the dosage of the simplest drugs, and he pleases himself by reading over and over again the notes which he took some fifteen years ago when a student of medicine. He has the typical speech, and pupils that do not react either to light or during accommodation. His knee-jerks are exaggerated and there is slight indication of ankle-clonus. He reads the papers, but does not know what they contain, and is depressed over the fact that he can not return to work. He is conscious of his illness, but thinks it is nothing more than ordinary nervousness.

It is such cases as this last one that lead one to doubt whether a distinctly specific form of general paresis is more favorable than those in which the disease has been developed years after the infection. On the other hand, there are some patients who surprise one by the unusual remission, whose recovery is so perfect that one feels inclined to doubt the correctness of the original diagnosis,

and in whom it is fair to say the preceding specific infection has been in one sense a boon. Allow me to refer to another patient, whose career has been most instructive to me. He was a man of great wealth, carrying unusual responsibilities; it was necessary, therefore, at the onset of the disease to take steps to protect his own large interests and his family's welfare. In this instance I felt called upon, after the diagnosis had been made, to ask his lawyer to take full charge of his affairs and to prevent the patient from participating in the management of them. To my great surprise, this patient has recovered so fully that he seems for the time being to have belied the diagnosis, and has pointed the lesson that it is well to take a more hopeful view of certain forms of paretic dementia than we have been in the habit of doing.

This patient was seen by me first in the summer of 1895. He was then forty-three years of age; he had made an unusual success in business, and had practically been well with the exception of a specific infection years ago. At the suggestion of his family physician he had gone to Europe to take a course of waters at Kissingen and Carlsbad. During a stay in Berlin he became so excited that his behavior attracted general notice, and he was about to be sent to an institution, when his wife decided that she would take all risks and bring him home. In former years he had been extremely careful in all his investments, but during the summer of 1895 had invested extravagantly and began to talk of his great wealth, a fact which he was in former days most anxious to keep from every one. He took special delight in having the most elegant surroundings wherever he was, and always insisted on having every room in which he was brilliantly lighted, whether it was day or night, for he thought this was befitting his station. He was constantly making memoranda, and as soon as made would tear them up; kept every letter that he received, and a dozen times a day assorted them. He became careless in the use of money and could not finally state whether bills that were presented to him were correct. He showed a

great inclination to drive in most extravagant fashion, and could never find horses that appeared to be spirited enough. At the time of the examination it was noted in addition to the mental symptoms that his knee-jerks were absent, and he presented distinct Argyll-Robertson pupils. There was slight tremor of facial muscles, but no marked tremor of speech. He was isolated in a quiet country place, put under the care of a competent nurse, was separated from all friends, and above all was prevented from going to the city to carry out the huge speculations which were on his mind and were entirely contrary to his former custom. When asked to give me a simple statement of his case in order to test his writing, he wrote a letter in which he said nothing about himself, but went into the most absurd statements as to the great pleasure he experienced in being under my care, etc. At the present time he seems to me to take a much more sober view of this privilege. His condition had so far improved that I felt warranted in sending him to California in the winter of 1895 in order that he might be separated from his family and from all former associations. There he did well for several months, but shortly before his return home, in the spring of 1896, he passed through another period of excitement followed by a condition of distinct depression, in which he imagined himself persecuted by others; thought that he had lost his entire fortune, that his house was not his own, and that every one had forsaken him; but from this depression he soon recovered, and since that time has been practically well. I compelled him to abstain from business until the fall of 1896, but thenceforward for a period of a year and a half he has been attending to business actively, and with the exception of the fact that he does not show so much anxiety in the management of his business as he formerly did (which may in part be due to the various injunctions given him) he is entirely well. He reports to me every few weeks, but presents only a few physical symptoms. The pupillary reactions have been somewhat altered as compared with the test of the first

examination. The left pupil does not react to light nor during accommodation; on the right side there is distinct Argyll-Robertson pupil. The right knee-jerk can now be obtained by reenforcement; the left knee-jerk is still absent.* Such changes in the condition of the pupillary reflexes and in the knee-jerks I have observed only in specific cases.

The improvement in this patient may or may not have been due to the repeated treatment by inunctions and by the iodides, but we may suspect the specific character of the entire morbid process, which in this case may end in complete recovery. I should be willing to concede the possibility of a prolonged period of remission in the course of a paretic dementia, but in this patient all the mental symptoms have disappeared to a wonderful degree, and the pupillary symptoms as well as the knee-jerks have undergone changes which to my knowledge have not been observed in the classic form of general paresis. Paretic dementia may be mistaken for multiple sclerosis, and *vice versa*, but this subject I will leave for another occasion.

Before concluding, it may be well to refer to another class of patients in whom the suspicion of general paresis is justly aroused, and yet the cases go on to full recovery.

In 1890 I saw in conjunction with Dr. Stephen Smith a young man of twenty-one years who had just finished his college career with highest honors. He had always been a hard student. Shortly after his graduation he went to the South and was pushed into work which was not altogether congenial to him. He came North to escape the intense heat, when he was taken down with what Dr. Smith pronounced "a typhoidal condition." On the fourth day he became excited and developed magnificent schemes. Ten days after the onset of these symptoms I found him without fever but in an extremely restless condition, speaking of colonizing schemes in Africa. He was about to go to Madison Square Garden to start a great project involving hun-

* The left knee-jerk can now be obtained by reenforcement.

dreds of millions, but he was willing to let only a few friends into the scheme. His pet idea was to give large sums to every fraternity in every college, for which he knew the fraternities would be duly grateful. His pupils were sluggish, his hands tremulous, his speech was excited, and test sentences could be repeated with difficulty. Reading was accomplished with less trouble. His knee-jerks were lively. He seemed entirely unconscious at the time of the examination, boasted of his unusual vigor, of his great mental superiority, having a feeling of pity for all others, and could not understand why physicians had been called in to examine a man who could give others a lesson in good health. The physical symptoms, taken in conjunction with the maniacal state, would have led to the diagnosis of paretic dementia if it had not been for his extreme youth and for the entire absence of any history of preceding or hereditary syphilis. After two weeks in an asylum his mind seemed to clear up, but he still developed extravagant schemes, boasted of his great historical attainments, and for a long time was certain that a history which he contemplated writing would startle the students of history here and abroad. In the course of another few weeks he became much more sober in thought, his pupils began to react promptly, but a slight tremor of the hands and of the tongue continued for some months. In November, 1890, he had recovered to such an extent that he was allowed to begin to study law, in which career he has made a considerable success. I heard nothing more of him until he became prominent in the recent reform movement in this city and was nominated for an important office. I venture to believe that his enthusiasm for this cause can not be interpreted as a sign of failing intellect.

I have had two other similar experiences, and, while paretic dementia does occur, though rarely, in younger individuals, I referred to this special history in order to call attention to the fact that delusions of grandeur as-

sociated with the usual physical symptoms, if occurring in younger persons, need not portend the development of this dreaded disease.

The preceding remarks should be interpreted as a brief statement of opinions that have been formed and based upon a very considerable number of cases of parietic dementia seen in private practice. My hospital and dispensary histories I have not had time to analyze. The conclusions presented for your consideration are:

General paresis or, better still, parietic dementia is a convenient designation for the clinical manifestations of a number of different morbid processes affecting the brain, and leading ultimately to an atrophy and destruction of cerebral (chiefly cortical) elements. The classical type of parietic dementia represents the severest of these diseases, and is fatal in fully ninety-five per cent. of the cases; but it is well to bear in mind that there are other forms of disease closely resembling the main type, which can scarcely be differentiated from it, and yet seem at times to yield a more favorable prognosis.

It is for this reason and from the result of actual observation that I would urge a careful consideration of the earlier stages of every form of parietic dementia, and would insist that the possibility of prolonged remissions or of a complete recovery be kept in mind.

It may be conceded that the disease has undergone some changes, but in all probability some of these are due to the fact that other forms of disease are becoming more frequent or that we recognize them more readily than we once did.

The greater duration of life after the disease has been recognized may be due to the better care which the patient receives, but possibly also to the earlier recogni-

tion of the first symptoms. Among these symptoms the evidences of mental derangement are of first importance, for on the strength of the physical symptoms alone a diagnosis is not warranted. But with the appearance of any evidence of the characteristic mental derangement the importance of the physical symptoms can not be overestimated, and among these early signs the facial tremor, the stammering, tremulous speech, and the abnormities in pupillary reaction are the most characteristic. The pupillary reflexes should be studied carefully with reference to the evidence that they supply of a distinct and active alcoholic or specific poison.

Finally, I would venture the statement that the symptoms commonly interpreted as those of a progressive dementia do not necessarily indicate the presence of a fatal disease, whence it follows that in every instance the patient should be given the benefit of proper treatment. Absolute mental rest, total abstinence, separation from an irritating environment, mild sedatives, and, in some instances, a rigorous antisyphilitic regimen will be of distinct value.

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